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Range: from to Features: ☐ SNP ☒ CDD ☒ HPRD

☐ 1: [NP_065681](#). Reports ret proto-oncogen...[gi:10862701]

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Comment Features Sequence

LOCUS NP_065681 1072 aa linear PRI 15-FEB-2009
 DEFINITION ret proto-oncogene isoform c [Homo sapiens].
 ACCESSION NP_065681
 VERSION NP_065681.1 GI:10862701
 DBSOURCE REFSEQ: accession [NM_020630.4](#)
 KEYWORDS .
 SOURCE Homo sapiens (human)
 ORGANISM [Homo sapiens](#)
 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Primates; Haplorrhini; Catarrhini; Hominidae; Homo.
 REFERENCE 1 (residues 1 to 1072)
 AUTHORS Pigny,P., Cardot-Bauters,C., Do Cao,C., Vantyghem,M.C., Carnaille,B., Pattou,F., Caron,P., Wemeau,J.L. and Porchet,N.
 TITLE Should genetic testing be performed in each patient with sporadic pheochromocytoma at presentation?
 JOURNAL Eur. J. Endocrinol. 160 (2), 227-231 (2009)
 PUBMED [19029228](#)
 REMARK GeneRIF: Observational study of gene-disease association. (HuGE Navigator)
 REFERENCE 2 (residues 1 to 1072)
 AUTHORS Henderson,Y.C., Shellenberger,T.D., Williams,M.D., El-Naggar,A.K., Fredrick,M.J., Cieply,K.M. and Clayman,G.L.
 TITLE High rate of BRAF and RET/PTC dual mutations associated with recurrent papillary thyroid carcinoma
 JOURNAL Clin. Cancer Res. 15 (2), 485-491 (2009)
 PUBMED [19147753](#)
 REMARK GeneRIF: Observational study of gene-disease association. (HuGE Navigator)
 REFERENCE 3 (residues 1 to 1072)
 AUTHORS Ito,Y., Miyauchi,A., Yabuta,T., Fukushima,M., Inoue,H., Tomoda,C., Uruno,T., Kihara,M., Higashiyama,T., Takamura,Y., Miya,A., Kobayashi,K. and Matsuzuka,F.
 TITLE Alternative surgical strategies and favorable outcomes in patients with medullary thyroid carcinoma in Japan: experience of a single institution
 JOURNAL World J Surg 33 (1), 58-66 (2009)
 PUBMED [19005720](#)
 REMARK GeneRIF: Observational study of gene-disease association. (HuGE Navigator)
 REFERENCE 4 (residues 1 to 1072)
 AUTHORS Cincinelli,R., Cassinelli,G., Dallavalle,S., Lanzi,C., Merlini,L., Botta,M., Tuccinardi,T., Martinelli,A., Penco,S. and Zunino,F.
 TITLE Synthesis, modeling, and RET protein kinase inhibitory activity of

3- and 4-substituted beta-carbolin-1-ones
JOURNAL J. Med. Chem. 51 (24), 7777-7787 (2008)
PUBMED [19053769](#)
REMARK GeneRIF: analysis of how RET protein kinase is inhibited by
beta-carbolin-1-ones
REFERENCE 5 (residues 1 to 1072)
AUTHORS Umansky,V., Abschuetz,O., Osen,W., Ramacher,M., Zhao,F., Kato,M.
and Schadendorf,D.
TITLE Melanoma-specific memory T cells are functionally active in Ret
transgenic mice without macroscopic tumors
JOURNAL Cancer Res. 68 (22), 9451-9458 (2008)
PUBMED [19010920](#)
REMARK GeneRIF: Melanoma-specific memory T cells are functionally active
in Ret transgenic mice without macroscopic tumors.
REFERENCE 6 (sites)
AUTHORS Blanchetot,C., Chagnon,M., Dube,N., Halle,M. and Tremblay,M.L.
TITLE Substrate-trapping techniques in the identification of cellular PTP
targets
JOURNAL Methods 35 (1), 44-53 (2005)
PUBMED [15588985](#)
REFERENCE 7 (sites)
AUTHORS Kawamoto,Y., Takeda,K., Okuno,Y., Yamakawa,Y., Ito,Y., Taguchi,R.,
Kato,M., Suzuki,H., Takahashi,M. and Nakashima,I.
TITLE Identification of RET autophosphorylation sites by mass
spectrometry
JOURNAL J. Biol. Chem. 279 (14), 14213-14224 (2004)
PUBMED [14711813](#)
REFERENCE 8 (sites)
AUTHORS Qiao,S., Iwashita,T., Furukawa,T., Yamamoto,M., Sobue,G. and
Takahashi,M.
TITLE Differential effects of leukocyte common antigen-related protein on
biochemical and biological activities of RET-MEN2A and RET-MEN2B
mutant proteins
JOURNAL J. Biol. Chem. 276 (12), 9460-9467 (2001)
PUBMED [11121408](#)
REFERENCE 9 (sites)
AUTHORS Iwashita,T., Kato,M., Murakami,H., Asai,N., Ishiguro,Y., Ito,S.,
Iwata,Y., Kawai,K., Asai,M., Kurokawa,K., Kajita,H. and
Takahashi,M.
TITLE Biological and biochemical properties of Ret with kinase domain
mutations identified in multiple endocrine neoplasia type 2B and
familial medullary thyroid carcinoma
JOURNAL Oncogene 18 (26), 3919-3922 (1999)
PUBMED [10445857](#)
REFERENCE 10 (sites)
AUTHORS Liu,X., Vega,Q.C., Decker,R.A., Pandey,A., Worby,C.A. and
Dixon,J.E.
TITLE Oncogenic RET receptors display different autophosphorylation sites
and substrate binding specificities
JOURNAL J. Biol. Chem. 271 (10), 5309-5312 (1996)
PUBMED [8621380](#)
REFERENCE 11 (residues 1 to 1072)
AUTHORS Itoh,F., Ishizaka,Y., Tahira,T., Yamamoto,M., Miya,A., Imai,K.,
Yachi,A., Takai,S., Sugimura,T. and Nagao,M.
TITLE Identification and analysis of the ret proto-oncogene promoter
region in neuroblastoma cell lines and medullary thyroid carcinomas
from MEN2A patients
JOURNAL Oncogene 7 (6), 1201-1206 (1992)
PUBMED [1350670](#)
REFERENCE 12 (residues 1 to 1072)

AUTHORS Santoro,M., Carlomagno,F., Hay,I.D., Herrmann,M.A., Grieco,M.,
Melillo,R., Pierotti,M.A., Bongarzone,I., Della Porta,G., Berger,N.
et al.

TITLE Ret oncogene activation in human thyroid neoplasms is restricted to
the papillary cancer subtype

JOURNAL J. Clin. Invest. 89 (5), 1517-1522 (1992)

PUBMED [1569189](#)

REFERENCE 13 (residues 1 to 1072)

AUTHORS Galland,F., Stefanova,M., Lafage,M. and Birnbaum,D.

TITLE Localization of the 5' end of the MCF2 oncogene to human chromosome
15q15---q23

JOURNAL Cytogenet. Cell Genet. 60 (2), 114-116 (1992)

PUBMED [1611909](#)

REFERENCE 14 (residues 1 to 1072)

AUTHORS Jhiang,S.M., Chiu,I.M. and Mazzaferri,E.L.

TITLE An STS in the human PTC oncogene located at 10q11.2

JOURNAL Nucleic Acids Res. 19 (15), 4303 (1991)

PUBMED [1678508](#)

REFERENCE 15 (residues 1 to 1072)

AUTHORS Tahira,T., Ishizaka,Y., Itoh,F., Sugimura,T. and Nagao,M.

TITLE Characterization of ret proto-oncogene mRNAs encoding two isoforms
of the protein product in a human neuroblastoma cell line

JOURNAL Oncogene 5 (1), 97-102 (1990)

PUBMED [2181380](#)

COMMENT REVIEWED REFSEQ: This record has been curated by NCBI staff. The
reference sequence was derived from [DA100452.1](#), [BC003072.2](#),
[BC004257.1](#), [X12949.1](#), [DA911581.1](#), [BM703293.1](#), [BE261914.1](#) and
[AI472270.1](#).

Summary: This gene, a member of the cadherin superfamily, encodes one of the receptor tyrosine kinases, which are cell-surface molecules that transduce signals for cell growth and differentiation. This gene plays a crucial role in neural crest development, and it can undergo oncogenic activation in vivo and in vitro by cytogenetic rearrangement. Mutations in this gene are associated with the disorders multiple endocrine neoplasia, type IIA, multiple endocrine neoplasia, type IIB, Hirschsprung disease, and medullary thyroid carcinoma. Two transcript variants encoding different isoforms have been found for this gene. Additional transcript variants have been described but their biological validity has not been confirmed. [provided by RefSeq].

Transcript Variant: This variant (4) differs in the 3' UTR and coding region compared to variant 2. The resulting isoform (c) is shorter and has a distinct C-terminus compared to isoform a. This isoform is also known as Ret9.

Publication Note: This RefSeq record includes a subset of the publications that are available for this gene. Please see the Entrez Gene record to access additional publications.

FEATURES

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